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Easily Accessible Treasure Susceptible to Misappropriation: A Discourse on Traditional Knowledge

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The paper deliberates upon the importance and misappropriation of traditional knowledge discussing few instances followed by a debate on the approach of developing and developed nations towards its protection. It further examines the interface between Intellectual property rights and traditional knowledge and the role played by intellectual property principles in protecting them from being misappropriated. It also explores the work of WIPO on traditional knowledge, which can serve as a guide to navigate through the complex policy, legal and practical concerns that surface when exploring traditional creativity and innovation and analyses the efforts made by the Indian Government in protecting the traditional knowledge.

Keywords: Traditional knowledge, WIPO, TKDL, TRIPS Agreement, Convention on Biological Diversity, innovation, intellectual property, *sui generis*

India is rich in culture, traditional knowledge and diversity. From time immemorial, India has redecorated its diversity and believed that the divine spirit of India can be found particularly in its indigenous community and its knowledge. The sustenance of the indigenous community heavily depends upon the natural resources and the resultant products they create using their traditional knowledge. Such as, preparation of medicine for treating disease with natural herbs and medicinal plants, which is popularly known as '*Ayurveda*' treatment and created several hundred years ago by our ancestors. The paper discusses the prominent issue related to the ever-increasing misappropriation of traditional knowledge held by Indian Indigenous communities and the lack of effective mechanisms to protect that knowledge. The study is done by critically examining whether and how, if at all, traditional knowledge associated with herbal plants, natural resources etc. can be protected under regime of Intellectual Property Rights. The primary object of this paper is to suggest a *sui generis* regime for the protection of traditional knowledge held by groups of Indian indigenous communities. This paper opens up with the introduction of few key concepts related to the traditional knowledge, its economic and cultural significance and then assesses the desirability and viability of protecting traditional knowledge and states the rationale for protecting the traditional

knowledge. Needless to state that the indigenous communities should be given opportunity to improve and preserve their cultural integrity. Law should promote social equity, equality and non – discrimination and recognize the value of traditional knowledge and promote its uses and development, promote conservation and sustainable use of biological diversity, ensure compliance with international legal and moral obligations.

Traditional Knowledge

Traditional knowledge is the knowledge that results from the intellectual activity of a community over generations. This includes practices, expertise, skills that form part of the traditional lifestyle of a community. It makes a nation progressive and opens gate for tradition based literary, artistic or scientific works, performances, inventions, scientific discoveries etc. For instance, the use of *turmeric* to treat wounds, *neem* paste to treat acne and similar *Ayurvedic* medicines.

There is no accepted definition of traditional knowledge at the International level. However, the Glossary of Key Terms Related to Intellectual Property and Genetic Resources, Traditional Knowledge and Traditional Cultural Expressions, 2018¹ broadly defines traditional knowledge to include intangible culture practices, heritage of indigenous and local communities. (*lato sensu*). There are two approaches to define traditional knowledge, one is in general sense

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and the other is in narrow sense. General sense refers to the content of knowledge itself however, in the international parlance it refers to knowledge resulting from some intellectual activity such as knowledge relating to agriculture, scientific knowledge, technical knowledge, medicinal knowledge, bio-diversity related knowledge etc. However, a reference can be made to the Convention establishing WIPO which gives an inclusive approach to the understanding of creativity. It mentions Intellectual property rights shall include “all other rights resulting from intellectual activity in the industrial, scientific, literary or artistic fields”² which widens the expanse of the understanding of the human creativity and can be interpreted to include traditional knowledge as well.

Traditional knowledge gained immense importance globally, and consequently demand for herbal medicines and related knowledge increased. Traditional system of medicine and its use is an important part of human health care since beginning in highly cultured and ancient civilizations such as India and China. The studies of such herbal plants, have given a wide scope of medicines based on such ingredients to many pharmaceutical industries. It is estimated that plant drugs constitute only 25% of the total drugs in developed countries whereas in developing countries such as India and China, plant drug contributes upto 80% of the total drugs. India is rich in *Ayurvedic* system which dates from before 1000 B.C.³ Medicinal plants such as, *Tulsi*, *Aloe*, *Turmeric*, *Neem* and *Ginger* have been used for curing several common ailments in many parts of the country.⁴ With such extraordinary growth, in the use of medicinal knowledge, the value for ‘herbal plants’ and the argument for protecting them under the regime of ‘intellectual Property Rights’ has been recognized and debated so far.

Misappropriation of Traditional Knowledge

In recent years indigenous peoples, local communities and government particularly in developing countries have demanded Intellectual property rights protection for traditional forms of creativity and innovation which under the conventional form of IP system are generally regarded as being in the public domain and thus not protected and anyone can use it. The concept of public domain refers to the principle that the creative material is owned by no person, it forms the part of the common pool and everyone is free to use them without any permission. The rationale behind the concept of

public domain is to prevent depletion of the common pool as well as to create a balance between the rights of the creator and the society. The concept connotes that there are few elements such as facts, themes, ideas, discovery, expired trademark, copyright, patent etc. should be made available to the people to be used as a raw material for further creation. It is this argument that is being projected by the developed nations that traditional knowledge does not fall under the ambit of Intellectual property being so ancient in nature and mostly oral in form and not fixed in any form hence can’t be protected under the modern IP system. However, indigenous people, local communities and government of developing countries have started rejecting “public domain” argument of Traditional Knowledge and Traditional cultures and contend that this gives rise to misappropriation and misuse of knowledge.

The debate is as to how changes should be made in the boundaries of public domain so that IP protection be given to traditional knowledge because IP protection begins when expanse of public domain ends. Public domain makes IP ineligible for ownership unlike things, which are publicly available like content on internet is publicly available but not in public domain. Similarly, traditional knowledge is publically available but not in public domain. Instances where TK is used are numerous like a traditional remedy appropriated by a pharmaceutical company to prepare a medicine and then company patents the process and product by using someone else’s traditional knowledge.

One of the classic examples is that of *turmeric* (*Curcuma longa* Linn.), a spice for flavoring Indian cooking. It has traditionally been used as a medicine for centuries to heal wounds and rashes. In 1995, at the University of Mississippi Medical Center, two Indians were granted a US Patent on the use of turmeric in wound healing. The Council for Scientific & Industrial Research (CSIR) at the USPTO contested it on the ground of prior art evidences. CSIR argued that turmeric has been used in India since ages for healing purposes and hence it belongs to the Indian traditional knowledge and can’t be appropriated by another country without our permission. Ancient Sanskrit documents and a paper published in one Journal of Indian Medical Association (1953) were presented to substantiate the objection. Thereby the USPTO had to uphold the objections of CSIR and cancel the patent granted in 1977 on the ground that

the knowledge regarding turmeric existed since time immemorial in India.

Another landmark example is that of *Neem* (*Azadirachta indica* A. Juss.). The European Union granted a Patent to the US Corporation W.R. Grace Company and US Department of Agriculture for preventing fungi on plants.⁵ In this case, Indian farmers represented by NGOs filed legal opposition against the Patent. Documentary evidences were submitted to prove that the medicinal effect of *Neem* extracts had been known and used by Indian agricultural communities since ages compelling EPO to revoke the patent claim. EPO decided that as per the evidences in hand the patent claims were anticipated because of the prior art leaving it non-inventive.

Further, the discussion would not be complete without referring to the controversy surrounding *Basmati* Rice (*Oryza sativa* Linn.). Before the UK Trade Mark Registry, Rice Tec. Inc. applied for registration of a word mark "Texmati". However, the objection regarding patent came into picture when Rice Tec. Inc. relied upon its US Patent document for the grant of registration on trademark "Texmati". A utility patent was granted to the Rice Tec. on a rice plant which was having characteristics similar to the traditional Basmati Rice (Indian) on September 2, 1997. The patent covered 20 claims not just on the novel rice plant but also on grains, seeds, method for selecting a rice plant for breeding etc. The Agricultural and Processed Food Exports Development Authority (APEDA) challenged the said Patent. Evidences from the Indian Agricultural Research Institute Bulletin, germplasm from Directorate of Rice Research, Hyderabad, were put forth to support the objection. Scientists from the Central Food Technological Research Institute (CFTRI) evaluated the grant characteristics and submissions were made for rejection of the Patent. Soon after that, Rice Tec. Inc. withdrew their claims and Indian parties were again able to challenge the Patent and preserve their traditional knowledge from being misappropriated at the hands of big companies. Unfortunately, bio piracy is not just limited to India but it exists in several other countries particularly developing nations, example, a US Patent has been granted over the plant of *Phyllanthus amarus* Schum. et Thonn, which is used for curing Hepatitis B, similarly, a UK patent has been taken over a molecule of *Piper nigrum* Linn. for treating vitiligo.⁶

National and International Initiative for Protection of Traditional Knowledge

Not much has been written about protection of Traditional Knowledge through Conventional Intellectual property rights law but in last couple of years the debate has intensified. While local literature on this subject is not too revealing but a great amount of literature has been generated in the form of reports by World Intellectual Property Organizations. The literature in this field primarily consisting of the WIPO reports, documentation on Traditional Knowledge practices, case studies, workshops, articles etc. is available to draw some analysis and conclusions. The issue of TK protection continues to be the subject of ongoing discussions by governments at international, regional and national forums. IPR is seen as one means to protect TK. Most of the countries use IPR as a tool to protect their knowledge, which is preserved by Indigenous and local communities.

TK is essential to the food security and health of millions of people in the developed world. Community/traditional knowledge are rooted in tradition, contemporary in nature and constantly evolving as individual and community responds to the challenges posed by their environment (Thurston, 1990). Last quarter of 20th century saw a revolution in the protection of traditional knowledge. Realizing the magnitude of the problem, efforts were made by the United Nations Educational, Scientific and Cultural Organization (UNESCO) and the World Intellectual Property Organization (WIPO) to find out a long-lasting solution through a mechanism for protection and preservation of folklore. International IP law also includes several provisions intended to protect various forms of folklore, and extensive work on international standards was undertaken in the 1980s.

Further, Biodiversity provides a foundation for ecologically sustainable development and food security. The unknown potentials of unexploited genes, species and ecosystem are of inestimable but certainly of high value. The Asia-Pacific region has a rich diversity of plants, which has been used by people for generations. The majority of people there still rely directly on this diversity of plants, or plant genetic resources for medicine (Bannerman, 1982). This knowledge is constantly evolving, for instance in agriculture, this knowledge is developing in terms of plants and crops adaptation to different ecological conditions like soil, rainfall etc. Traditional knowledge passes from generation to generation by

practice and sustains the crops in the changing climate. Tribal villages' ecosystems in India function mainly by recycling resources within the ecosystem. Indigenous agro ecosystem needs to be protected which is degrading because of multiple factors like deforestation, exploitation of genetic resources etc.

In developing nations, majority of the population depends on the traditional medicine to help their health care needs. In 1980, WIPO and UNESCO adopted model law on folklore. In 1989, farmers' right was introduced in International understanding on plant genetic resources. In 1992, Convention on Biological Diversity (CBD) highlighted the need to promote and preserve TK. In spite of all these efforts, final and acceptable solution for protection and promotion of TK has not emerged. Thurston (1990) has explained some of the important traditional agriculture practices adopted in different parts of the world. It has been rightly stated that amongst developing nations a deep suspicion about intellectual property protection exists.⁷ They simply view it as colonialism by developed nations whose researchers frequently rely on traditional knowledge of indigenous people to isolate promising biota, which becomes the basis for patent protection in industrialized world. Most of the times developing countries are not compensated by developed nations for appropriating the traditional knowledge and the relevant plant species for the benefit of the rest of the world.⁸ Consequently, developing countries have explicitly demanded a system of IPRs that protects traditional knowledge held by the indigenous people. Many governments of developing nations continue to push for such system of protection for genetic resources, traditional knowledge and folklore within WIPO since 2001.⁹

Paul Kuruk¹⁰ argued that most of the countries of WTO are developing countries and they are hence required to follow TRIPS Agreement of protection which is a major concern because not all countries are in a condition to comply with the requirements of such agreements. Consequently, they have demanded the inclusion of traditional knowledge as part of discussion regarding revision of TRIPS Agreement.¹¹ It is also argued that a tremendous amount of knowledge in the world cannot easily be protected under the branches of intellectual property i.e. under patent law, which is selective as to the type of invention and other copyright which is also restricted in nature.¹² Traditional knowledge is rarely protected even though a large amount of such knowledge is incredible because of its

application to the maintenance and sustainable use of biological diversity.

Further Graham Dutfield (2004) in his book "Intellectual Property, Biogenetic Resources and Traditional Knowledge"¹³ gives a comprehensive relationship between intellectual properties, biogenetic resources, as they exist in nature and in the form of commercial products and knowledge relating to practical applications of these resources, including traditional knowledge. He clarifies the economic importance of industries that use biogenetic resources and traditional knowledge, the extent to which they are dependent upon them, and the way that modern intellectual property rights (IPR) law has evolved to meet their needs. He shows how stronger IPR protection in the area of life science innovation and biogenetic resources has given rise to controversies.

Further, it has been argued by various scholars that the access benefit-sharing mechanism for protection of traditional knowledge could be a strong tool to secure the rights of indigenous community. However, some raise number of key issues that emerge in protection traditional knowledge through the conventional forms of IPRs. They argue that the existing intellectual property laws have proved to be inadequate for the protection of traditional knowledge.¹⁴ Since the exclusionary characteristics of intellectual property rights are not suited for the protection of traditional knowledge because the existing intellectual property laws have not been applied to knowledge that is mostly collectively held and is ancient in nature.

As per the All India Coordinated Research Project on Ethno botany (AICRPE) tribal communities use about 9500 plant species of which over 300 species were used as 14 pesticides. Centre for Indigenous Knowledge Systems (CIKS), Chennai, Tamil Nadu, is devoted to exploring and developing the contemporary relevance and applications of traditional Indian knowledge systems.¹⁵ They have developed organic farming packages for paddy and cotton that gave yields at par with those of high yielding varieties. They followed the practices described in *Vrukshayurveda* since 1998 for plant protection against pests and diseases of paddy and vegetables and established bio-pesticide units in the villages.

Few models have also been suggested by civil society and government, for instance, an autonomous society established under the Department of Science and Technology, Government of India in 2000, along with Honey Bee Network under SRISTI (Society for

Research and Initiatives for Sustainable Technologies and Innovations) has been scouting traditional knowledge and linking these with Science and Technology experts, investors and entrepreneurs for further valorization. One such interesting model known as the *Kani* model was developed in the State of Kerala. It relates to the sharing of benefits with a tribal community, the *Kanis*, from whom a vital lead for developing a scientifically validated herbal drug (*Jeevani*) was obtained by scientists of Tropical Botanic Garden Research Institute (TBGRI) Kerala.

The TBGRI model has gained popularity because it is the first of its kind that has recognized the resource rights and IPR of a traditional community by way of sharing equitably the benefits derived out of the use of knowledge developed and maintained by the community for many generations. (Anand 1998, Anuradha 1998, Gupta 2002). It also demonstrates the vast and untapped potential of the Indian traditional knowledge systems particularly the traditional health care practices of the local and indigenous people. India became more aware about its communities' rights in the last decade and in the year 2009-2010, India succeeded in bringing about two cancellations or withdrawal of 36 applications to patent traditionally known medicinal formulations. The key to success was Traditional Knowledge Digital Library (TKDL),¹⁶ a database containing 34 million pages of formatted information on some 2,260,000 medicinal formulations in multiple languages.

India's TKDL, a collaborative project between the Council of Scientific and Industrial Research (CSIR), and the Department of AYUSH, is a home-grown effort to ensure patent offices around the world do not grant patents for applications founded on India's wealth of age-old TK. Dr. V.K. Gupta (2011) the author and architect of India's TKDL, explained the critical role that this unique tool plays in protecting India's traditional knowledge. TKDL is a pioneer initiative undertaken by India to prevent misappropriation of traditional medicinal knowledge at the International Patent office. It was a brainchild of the Indian effort on revocation of patent relating to the patent on wound healing properties of turmeric at the USPTO. TKDL expert group estimated in the year 2005 that about 2000 wrong inventions were patented at the International level relating to Indian systems of medicine, unfortunately due to the lack of accessibility of documentation of our traditional knowledge, which existed only in local languages such as Hindi, Urdu, Tamil, Sanskrit etc.

TKDL has also been able to set international specifications and standards for setting up of TK databases based on TKDL specifications. This was adopted in 2003 by the Committee in Fifth Session of the Intergovernmental Committee (IGC) of WIPO on Intellectual Property and Genetic Resources, Traditional Knowledge and Expression of folklore.¹⁷ Currently, with the approval of Cabinet Committee on Economic Affairs, nine International Patent Offices can access TKDL.¹⁸ As per the Access Agreement the examiners of Patent Office can conduct search-utilizing TKDL for examination purposes only and cannot reveal the content of TKDL to any other third party. Also, pre-grant oppositions are filed at various IPOs with the help of evidences taken from TKDL. As per the records, the impact has been tremendous, so far around 200 patent applications of the pharmaceutical companies of U.S., Great Britain, Spain, Italy, China etc have either been withdrawn/set aside/amended based on the evidences (prior art) available on TKDL databases. It is also expected that about 1200 more cases relating to Patent, pre-grant opposition filed by TKDL will be successful.

TKDL has proved to be an effective deterrent against bio-piracy and the efforts are being recognized globally and not just domestically.¹⁹ Because of which other TK rich countries have also undertaken the idea of establishing strong presence of their TK though documentation and making it accessible though some portal.

In International framework, the deliberations offered to traditional forms of medicine and the botanic medicine industry has taken place against the background of two international conventions, namely the Convention on Biological Diversity (CBD), and the Trade-Related Aspects of Intellectual Property Systems (TRIPS) under the patronages of the World Trade Organization (WTO) system. The Convention on Biological Diversity (CBD)²⁰ is one of the major international conventions that confer ownership of biodiversity to indigenous communities and individuals, thereby protecting their rights over their traditional knowledge. Therefore, plant based products like Traditional Chinese Medicines and Indian system of medicine like Ayurveda that originates from Traditional Knowledge of indigenous communities are protected by the CBD.

However, this Convention has several loopholes in protecting the traditional medicine knowledge, which demands a separate model, which can be termed as sui

generis system, solving the traditional problem of exploitation of TK. According to Black's Law Dictionary "*sui generis*" is defined as "of its own kind or class; unique or peculiar". It is a regime designed to protect rights that does not fall under the purview of traditional patent, trademark, copyright and trade secret. For example, if the database is not original, it cannot be protected under Copyright or Patent Law but it may be protected under a *sui generis* system. Other examples are plant breeders' rights as provided in the International Convention on the Protection of New Varieties of Plants, 1991 (the UPOV Convention) and the semiconductor and integrated circuits given under the Treaty on Intellectual Property in respect of Integrated Circuit, 1989 (The Washington Treaty).

In the year 2000, in the 25th Session of WIPO's General Assembly, the Secretariat invited member states to consider the proposal for an establishment of an Intergovernmental Committee on Intellectual Property and Genetic Resources, Traditional Knowledge and Folklore (IGC). The aim of IGC is to formulate an international agreement relating to traditional knowledge, genetic resources and traditional cultural expressions. The IGC mandate requires its member states to primarily focus on designing a common understanding on fundamental issues including a segregation on what needs to be protected as a traditional knowledge and what should not be protected as TK.²¹ The Committee acted as a forum to discuss issues arising in the context of access to genetic resources and benefit sharing, protection of traditional knowledge. The proposal was welcomed by developing countries and was approved without opposition from other members.²² Most of the IGC's work on traditional culture expressions was based on defensive protection including the disclosure of origin of genetic resources in patent application. However, the first shift towards positive protection was seen at the third session of the IGC in the year 2002, for which a paper called elements of *sui generis* system for protection of traditional knowledge was prepared by the WIPO.

IGC sessions addressed two types of measures relating to the documentation of TK. One was the inclusion of TK in Patent Cooperation Treaty (PCT) and the recognition of TK in patent examination. Another is TK documentation projects and initiatives including IP Management.²³ The latest session (Thirty-Eight Session) of the WIPO's IGC concluded on 14 December 2018. It addressed traditional knowledge and traditional cultural expressions. An ad hoc expert group on traditional

knowledge and traditional cultural expressions addressed the issues related to policy and technicalities on 9 December 2018. Next session was scheduled from 18 to 22 March 2019, to address traditional knowledge and traditional cultural expressions, which may have come up with some substantive solutions to the issues pertaining to the traditional knowledge discussed above.

India also took an important decision to make a request to the PCT to add the Indian Traditional Knowledge Digital Library (TKDL) to the PCT documentation. The Indian Patent Office has shared more documents for consideration to recommend, review and maintenance of the non-patent literature and TK based prior art. In the month of July 2018, the Task Force circulated a questionnaire on non-patent literature, inclusion of databases in PCT minimum documentation and prior art based on TK among the International Searching and Preliminary Examinations Authorities.²⁴

Conclusion

Lack of national and international laws on recognition of traditional knowledge as a property of the community have led to exploitation without benefit for the people who have created and preserved the traditional knowledge. Existing Western intellectual property laws support and promote, misappropriation of traditional knowledge that promises profit, with no obligation or expectation to allow the originators of the knowledge a say or a share in the proceeds. Conventional intellectual property law does not cover inventions and innovations of indigenous and local peoples.

Folk songs and folk dance of indigenous community could be adapted and copyrighted without giving any kind of moral and economic rights to the community. Genetic resources could be used to produce an invention, which can be patented which raises doubts regarding the conservation and sustainable use of biodiversity and equitable benefit sharing.

The patentability of products and/or processes derived from traditional knowledge of indigenous and local people poses a number of critical questions associated with compensation for the knowledge, and protection against the past uncompensated exchange of the knowledge. Indigenous and local people do not have strong institutional arrangements to safeguard their property and enforce conventional intellectual property rights. These issues are of great economic and cultural importance. A nation is known for its rich traditions and culture, which if not preserved and protected will either be forgotten or appropriated by outsiders to make money.

There should be an establishment of *sui generis* regimes covering traditional knowledge and rights. The researchers argue that documentation of TK has been a significant step in protecting the rights of indigenous communities but what about those people who are commercially exploiting the traditional knowledge without claiming any patent but not sharing the benefits with the indigenous community. Patent protection favors big pharmaceutical companies by entitling them to enrich themselves on someone else's traditional knowledge on ground of novelty and usefulness. TK has been exploited without any benefit to the custodians of the knowledge. Therefore, the need is felt for strong guidelines dealing with TK, which would help research and development in India.

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